

# ***SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) PLAN***

## **SHELL OIL PRODUCTS US SHELL MARTINEZ REFINERY**

**MARCH 2015**

**Shell Oil Products US**  
**Shell Martinez Refinery**  
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# SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

## TABLE OF CONTENTS

<b>Foreword</b>	<b><u>Page</u></b>
Title Page .....	i
Table of Contents.....	ii
Distribution List.....	v
Professional Engineer Certification .....	vi
Management Approval.....	vii
Certification of the Applicability of the Substantial Harm Criteria .....	viii
Record of Revisions.....	ix
Log of Plan Review and Amendments .....	x
 <b>1.0 Introduction, Administration and Compliance</b>	
1.1 Facility Description .....	1-1
1.2 Plan Purpose/Objectives.....	1-2
1.3 Plan Distribution Procedures .....	1-2
1.4 Plan Review and Update Procedures.....	1-3
1.5 Regulatory Compliance.....	1-5
1.6 Conformance with Other Requirements .....	1-6
1.7 Impracticability.....	1-6
Figure 1.1 Area Map.....	1-8
 <b>2.0 Notification and Response Procedures</b>	
2.1 Countermeasures .....	2-1
2.2 Internal Notification .....	2-1
2.3 External Notification .....	2-2
Figure 2.1 Notification References.....	2-3
Figure 2.2 Notification Data Sheet .....	2-5
2.4 Response Procedures .....	2-6
2.5 Disposal Methods .....	2-6
2.6 Prevention .....	2-7
 <b>3.0 Training and Inspections</b>	
3.1 Personnel Training and Discharge Prevention Procedures .....	3-1
3.1.1 General Facility Training Practices .....	3-1
3.1.2 Training for Oil Handling Personnel.....	3-2
3.1.3 Logistics Personnel – Tank Farms and ETP .....	3-3
3.1.4 Logistics Personnel – Stormwater Release Operations.....	3-4
3.1.5 Oil Spill Response Personnel .....	3-4
3.1.6 Vacuum Truck Operators.....	3-5
3.1.7 Truck Drivers.....	3-5
3.2 Inspections, Test and Records .....	3-6
3.2.1 Container Testing and Inspections – Aboveground Tanks .....	3-6
3.2.2 Container Testing and Inspections – Shop-built Fixed and Port. Tanks .....	3-7
3.2.3 Valves and Pipelines Inspections .....	3-9
3.2.4 Documentation and Recordkeeping .....	3-10

**4.0 Facility Drainage**

4.1	Diked Storage Area Drainage Systems .....	4-1
4.2	Undiked Area Drainage.....	4-2
4.2.1	West Watershed – ETP (E-001) .....	4-2
4.2.2	Upper and Lower Lake Slobodnik System (E-002) .....	4-3
4.2.3	Vine Hill Pond System (E-004) .....	4-4
4.2.4	Flare Area Pond (E-005).....	4-4
4.2.5	Volatiles Storage Area (E-007) .....	4-4
4.2.6	Central Maintenance/Shops Area (E-008) .....	4-4
4.3	Stormwater Drainage Procedures .....	4-6
4.4	Monitoring Program (CA H&SC 25270.7).....	4-6
Figure 4.1	(b) (4) .....	4-8

**5.0 Bulk Storage Containers**

5.1	Container Design and Construction.....	5-1
5.1.1	Construction .....	5-1
5.1.2	Spill Prevention and Overfill Protection .....	5-1
5.2	Secondary and Tertiary Containment Systems .....	5-2
5.2.1	Secondary Containment Systems .....	5-2
5.2.2	Tertiary Containment Systems.....	5-3
5.3	Completely and Partially Buried Tanks.....	5-3
5.4	Mobile or Portable Oil Storage Containers .....	5-3
5.5	Internal Heating Coils.....	5-3

**6.0 Transfer Operations, Pumping, and In-Plant Process**

6.1	Piping Installations .....	6-1
6.2	Protection of Underground Piping .....	6-1
6.3	Out-of-Service Piping.....	6-1
6.4	Vehicle Warning Procedures .....	6-1

**7.0 Tank Car and Tank Truck Loading/Unloading Operations**

7.1	Facility Operations .....	7-1
7.2	Loading/Unloading Area Containment System .....	7-1

**8.0 Security**

8.1	Fences and Entrance Gates .....	8-1
8.2	Oil and Oil Product Storage Container Valves .....	8-2
8.3	Oil and Oil Product Pump Starter Controls.....	8-2
8.4	Pipeline Connections .....	8-2
8.5	Lighting.....	8-2

## SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN APPENDICES

### A. Facility Specific Information – Potential Spill Sources and Container Identification

- A.1 – (b) (4)
- A.2 – (b) (4)
- A.3 – (b) (4)
- A.4 – (b) (4)
- A.5 – (b) (4)
- A.6 – (b) (4)
- A.7 – (b) (4)

### B. Forms, Reports, and Checklists

- B.1 – Discharge Prevention Meeting/Training Log – Example Only
- B.2 – Oil Spill Report Form – For any spill of oil to water
- B.3 – Qualified Oil Spill Report Checklist

### C. Additional Supporting Documentation

- C.1 – (b) (4)
- C.2 – (b) (4)

### Cross Reference

### D. Facility Diagrams

- D.1 – (b) (4)
- D.2 – (b) (4)
- D.3 – (b) (4)
- D.4 – (b) (4)

DISTRIBUTION LIST		
COPY NUMBER	PLAN HOLDER	
1-4	Shell Martinez Refinery Shell Oil Products US 3485 Pacheco Blvd. Martinez, CA 94553	Emergency Operations Center (EOC) – SPC1 Logistics Operations Specialist – SPC2 EA Library – Inspections and Audits - SPC3 Sr. Staff Environmental Engineer – Water – SPC4
5 (electronic)	Witt O'Brien's 818 Town & Country Blvd., Suite 200 Houston, TX 77024	

**Note:** The Distribution of this Plan is controlled by the Copy Number located on the front cover and by internal procedure A(A)-29/HSE002.P07 - Control of Authorized Hard Copies. Plan Distribution Procedures are provided in Section 1.3 and the Plan Review and Update Procedures are provided in Section 1.4 and should be followed when making any and all changes.

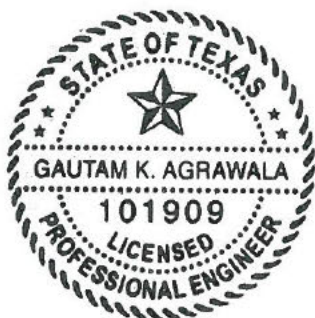
**An electronic copy of this Plan is available on the Refinery's intranet site.**

**PROFESSIONAL ENGINEER CERTIFICATION**

By means of this Professional Engineer Certification, I hereby attest, to the best of my knowledge and belief, to the following:

- I am familiar with the requirements of 40 CFR Part 112 and have verified that this Plan has been prepared in accordance with the requirements of this Part.
- I or my agent visited and examined the Facility on February 1, 2010. My certification is based upon the condition of the Facility as of this date [plus any satisfactorily completed implementation items I may have required]. Any material changes to the Facility made subsequent to this date must be separately reviewed, documented and P.E. certified as a Technical Amendment, as appropriate.
- I have verified that this Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards.
- I have verified that the required inspection and testing procedures have been established as described in this Plan.
- I have verified that the Plan is adequate for the Facility.
- My certification of this Plan in no way relieves the owner/operator of the Facility of their duty to prepare and fully implement the Plan in accordance with the requirements of 40 CFR Part 112. The attestations listed above are limited to only those facilities, programs, practices, and procedures pertaining to oil and oil products. I in no way assume any liability of whatsoever kind or nature by my certification.
- The owner/operator, by "Management Approval" located on the following page, acknowledges this certification and the compliance measures described herein.
- This certification is limited to the sections referenced in the Spill Prevention, Control, and Countermeasure Plan (40 CFR 112) cross reference.
- This Plan is valid only to the extent that the Facility Owner or Operator maintains, tests, and inspects equipment, containment, and other devices as prescribed in this Plan and completes any Implementation Requirements.

(Seal)



Date of Seal/Signature: 07/30/2010

Registered Professional Engineer

A handwritten signature in blue ink, appearing to read "Gautam K. Agrawala", written over a horizontal line.

Gautam K. Agrawala, Ph. D., P.E.  
O'Brien's Response Management Inc.  
State of Texas Registration No: 101909



## PROFESSIONAL ENGINEER CERTIFICATION FOR SPECIFIC FACILITY MODIFICATION

### Facility Modification

- Date of Review: September 7, 2012
- Description of Change: 1. Addition of LOP-12, CF-19, CF-20, and OPC-16.  
Removal of OPC-2 and OPC-11.
- Impact of Change: 1. Attestation on secondary containment's ability to retain spilled product until cleanup occurs remains unchanged.


### Professional Engineer Certificate

- I have evaluated the change in Facility design and have determined that it does not materially affect the Facility's potential for a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.
- This Technical Amendment is only valid for the certification of the item(s) listed above and further certified below.

(Seal)



Registered Professional Engineer

  
Gautam K. Agrawala, Ph.D., P.E.  
Compliance Consultant  
State of Texas Registration No.: 101909  
O'Brien's Response Management Inc.

Date of Seal/Signature: 09/07/2012

## PROFESSIONAL ENGINEER CERTIFICATION FOR SPECIFIC FACILITY MODIFICATION

### Facility Modification

- Date of Review: January 17, 2014
- Description of Change: 1. Addition of OPC-17 Lubrimist and OPC-18 Drum storage area.
- Impact of Change: 1. Attestation on secondary containment's ability to retain spilled product until cleanup occurs remains unchanged.

### Professional Engineer Certificate

- I am familiar with the requirements of Part 112 of Title 40 the *Code of Federal Regulations* (40 CFR part 112) and have supervised the examination of the facility by qualified personnel for the technical amendment as described above.
- I attest that the addition of the OPC 17 Lubrimist and OPC-18 Drum Storage Area to the Plan have been prepared in accordance with good engineering practice, including consideration of applicable industry standards, the requirements of 40 CFR part 112 established inspections and testing, and that the addition of this technical amendment to the Plan does not materially impact the adequacy of the Plan for the Facility.
- I have evaluated the change in Facility design and have determined that it does not materially affect the Facility's potential for a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.
- This Technical Amendment is only valid for the certification of the item(s) listed above and further certified below.

(Seal)



Ralph Chaiet P.E.

Registered Professional Engineer

Ralph Chaiet, P.E.  
Compliance Consultant  
Witt O'Brien's

State of Texas Registration No.: 75161

Date of Seal/Signature: 2/19/2014



## PROFESSIONAL ENGINEER CERTIFICATION FOR SPECIFIC FACILITY MODIFICATION

### *Facility Modification*

- Date of Review: March 9, 2015
- Description of Change:
  1. Addition of Tanks TK1128, TK17595 and TK17596.
  2. Removal of Tanks TK541 and TK544.
- Impact of Change:
  1. No negative effect to compliance of this SPCC Plan.

### *Professional Engineer Certificate*

- I have evaluated the change in Facility design and have determined that it does not materially affect the Facility's potential for a discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.
- This Technical Amendment is only valid for the certification of the item(s) listed above and further certified below.

(Seal)

Registered Professional Engineer



*Ralph Chaiet P.E.*

Ralph Chaiet, P.E.  
Compliance Consultant  
Witt O'Brien's  
State of Texas Registration No.: 75161

Date of Seal/Signature: 7/31/2015

**MANAGEMENT APPROVAL**

Owner/Operator responsible for Facility: Shell Oil Products US

- Facility Name and (Physical) Location: Shell Martinez Refinery  
3485 Pacheco Blvd.  
Martinez, CA 94553

- By my signature below, management approves this Plan and acknowledges that the elements identified within this Plan have been implemented.
- This page may be used for the initial Management Approval or for subsequent change of management and/or change of designated person accountable.

- This SPCC Plan will be implemented as herein described.

Signature: \_\_\_\_\_

Designated person accountable for oil  
spill prevention at the Facility:

Name: Tom Rizzo

Name: Thor Nygaard

Date: \_\_\_\_\_

Title: Production Manager

Title: Refinery Manager

## CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

FACILITY NAME: Shell Martinez Refinery

FACILITY ADDRESS: 3485 Pacheco Blvd.

Martinez, CA 94553

1. Does the facility transfer oil over water to or from vessels **and** does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?  

X     YES           NO
2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons **and** does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?  

YES        X     NO
3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons **and** is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula<sup>1</sup>) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (59 FR 14713, March 29, 1994) and the applicable Area Contingency Plan.  

X     YES           NO
4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons **and** is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula<sup>1</sup>) such that a discharge from the facility would shut down a public drinking water intake<sup>2</sup>?  

YES        X     NO
5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons **and** has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?  

YES            X        NO

## CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature \_\_\_\_\_

Refinery Manager  
Title

Tom Rizzo  
Name (please type or print)

---

Date \_\_\_\_\_

<sup>1</sup> If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

<sup>2</sup> For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).



- Remove and discard obsolete pages.
- Replace obsolete pages with the updated pages.
- Record each revision on this form.
- Revisions that occur as a result of technical amendments and/or the five (5) year management review should be documented on the "Log of Plan Review and Amendments" form that follows this page.

[illegible]

## LOG OF PLAN REVIEW AND AMENDMENTS

The function of this log is to document technical amendments, as defined in 40 CFR 112.5 and non-technical amendments that occur as a result of the Plan's required five (5) year management review. All revisions, whether, technical or non-technical, should be documented on the "Log of Plan Review and Amendments" that precedes this page.

### NON TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer.
- Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

### TECHNICAL AMENDMENTS

- Technical amendments are certified by a Professional Engineer.
- Examples of changes include, but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacements, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility.
- An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.

### MANAGEMENT REVIEW

- Management will review this SPCC Plan at least each five (5) years and document the review on the form below.

Review/ Amend Date	Signature	Amend Plan (will/will not)	Description of Review Amendment	Affected Page(s)	P.E. Certification (Y/N)
09/12	GKA	Will	Addition of LOP-12, CF-19, CF-20, OPC-16 Removal of OPC-2, OPC-11	Figure A.2, Figure D.2, FWD-via, FWD- ix, FWD-x	Y
01/14	DRK	Will	Addition of OPC-17 and OPC-18	Cover page, FWD-v, FWD- vib, FWD-ix, FWD-x, A-3, A-4, D-3	Y
03/15	ATE	Will	Complete Plan. Addition of TK1128, TK17595 and TK17596. Removal of TK541 and TK544.	Complete plan.	Y



# 1.0 INTRODUCTION, ADMINISTRATION AND COMPLIANCE

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## 1.1 FACILITY DESCRIPTION

This Spill Prevention, Control, and Countermeasure (SPCC) Plan has been developed in accordance with the regulatory requirements of 40 CFR Part 112 (EPA) for the Shell Oil Products US, Shell Martinez Refinery (hereinafter referred to as “Facility”). This Plan does not include the neighboring Shell Products Terminal, the Shell Martinez Catalyst Plant or the Air Products and Chemicals, Inc. hydrogen generation plant (HP-3).

The Facility is located at 3485 Pacheco Blvd. in the Martinez area of Contra Costa County, California. The Facility is located approximately 30 miles northeast of San Francisco in northern Contra Costa County on the Carquinez Strait near the Suisun Bay (Figure 1.1).

The Facility has the following general operating and design characteristics:

- The Facility is an onshore refining facility.
- The Facility stores crude oil, intermediate petroleum products (materials that require further processing before blending or transport as a finished product), and finished petroleum products. See Appendix A for more specific information.
- The Facility receives crude oils and intermediate petroleum products via pipeline, railcar, barge and ship.
- The Facility ships intermediate petroleum products and finished petroleum products via pipeline, truck, railcar, barge and ship.
- The Facility also receives drums, totes and other portable containers of petroleum products (e.g. lubricating oils) and process additives for internal use via truck.
- The Facility’s petroleum process operations include distillation, catalytic cracking, catalytic reforming, hydrotreating, alkylation, hydrocracking, Flexicoking, delayed coking, dimerization, and isomerization.
- The “Potential Spill Sources and Container Identification” table is provided in Appendix A.
- The Facility processes up to 155,000 barrels per day (BPD) of crude oil to produce gasolines, jet fuels, diesel fuel, marine fuel oil, and LPG’s.
- The Facility includes approximately 175 aboveground hydrocarbon storage tanks, hundreds of process vessels, numerous loading/unloading facilities and hundreds of miles of piping, including connections to pipeline transfer systems and the wharf transfer operations on the Carquinez Strait.
- Facility operates under the 324110 NAICS.

## 1.1 FACILITY DESCRIPTION (Cont'd)

- Facility is not located on Indian lands.
- The Facility has a total bulk storage capacity of 420,206,008 gallons.
- Nearest potential receiving water from a spill is the Carquinez Strait.
- Only the non-transportation-related components associated with the refinery and cogeneration plant are covered by this SPCC Plan. These components include:
  - Large aboveground storage tanks
  - Other bulk storage containers  $\geq$  55 gallons
  - Oil filled electrical equipment
  - In-plant process pipelines
  - Product loading racks

## 1.2 PLAN PURPOSE/OBJECTIVES

The specific objectives of this Plan are to define the spill prevention, control, and countermeasures for the Facility and to assist Facility personnel in establishing and maintaining an efficient and effective program. This is accomplished in the Plan by addressing:

- Personnel, Training and Spill Prevention Procedures
- Inspections and Records
- Facility Drainage
- Bulk Storage Containers and Operational Equipment
- Shop-built Fixed and Portable Oil Storage Containers
- Transfer Operations, Pumping and In-Plant Processes
- Railroad Tank Car and Tank Truck Loading/Unloading Racks
- Security

## 1.3 PLAN DISTRIBUTION PROCEDURES

The Facility's Environmental Affairs staff has the responsibility for distribution of the Plan. Distribution will be handled in the following manner:

- Distribution of the Plan is controlled by the number on the cover page. The Forward of this Plan includes a distribution list to facilitate control and to identify the current holders of the plan. These updates will be provided and all hard copies will be controlled in accordance with internal Procedure A(A)-29/HSE002.P07.

### 1.3 PLAN DISTRIBUTION PROCEDURES (Cont'd)

- The Facility maintains a complete copy of the Plan at the Facility, as it is attended at least four (4) hours each day. The Plan will be available to the EPA Regional Administrator for on-site review during normal working hours.
- The Facility also maintains an electronic copy of the Plan on its intranet that is available from any computer workstation.

### 1.4 PLAN REVIEW AND UPDATE PROCEDURES

The "Designated Person Accountable for Oil Spill Prevention" (identified on the Management Approval page in the Foreword) with support from the Environmental Affairs and Logistics staff will coordinate the following plan review and update procedures:

#### ***Facility Changes requiring Plan Revision***

- This Plan will be revised when there are changes in the Facility's design, construction, operation, or maintenance that materially affects the Facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines. Such amendments shall be prepared within six (6) months, and implemented as soon as possible, but not later than six (6) months following preparation of the amendment.

As described by 40 CFR Part 112.5(a), changes requiring revision may include, but are not limited to:

- Commission or decommission of containers.
- Replacement, reconstruction, or movement of containers.
- Reconstruction, replacement, or installation of piping systems.
- Construction or demolition that might alter secondary containment structures and/or drainage systems.
- Changes of product or service.
- Revision of standard operating or maintenance procedures at the Facility.

Revisions that are made to the Plan are classified into either "Technical Amendments" or "Non-Technical Amendments."

#### ***Technical Amendments***

- All technical amendments, such as the ones listed earlier in this Section and on the "Log of Plan Review and Amendments" page must be certified by a Registered Professional Engineer to satisfy the requirements of 40 CFR Part 112.
- Each certified technical amendment will be described, stamped and dated on successive pages after the P.E. Certification and recorded on the "Log of Plan Review and Amendments" located in the Foreword.

## 1.4 PLAN REVIEW AND UPDATE PROCEDURES (Cont'd)

### *Non-Technical Amendments*

- All non-technical amendments such as changes to phone numbers and/or contacts or other non-technical text changes need only be documented on the "Record of Revisions" located in the Foreword unless the non-technical amendment occurs during the five (5) year review discussed later in this Section. If revisions do occur during the five (5) year review then the revision is noted on the "Log of Plan Review and Amendments" in addition to the "Record of Revisions".

### *Inclusion of Amendments into the Plan*

- The Facility's Environmental Affairs staff will coordinate the word processing, publication, and distribution efforts of completing the revisions and maintaining the Plan.
- Immediately upon receipt of any revisions, Environmental Affairs staff shall insert the revised pages into each copy of the Plan and discard the obsolete pages. This action should then be recorded on the "Log of Plan Review and Amendments" and "Revision Record" page in the Foreword.

### *Five-Year Review*

- At least once each five (5) years the Facility will complete a review and evaluation of this SPCC Plan and make amendments within six (6) months of the review. This review will include, at a minimum, a review of the following:
  - Applicability of new prevention and control technology which may significantly reduce the likelihood of a spill event from the Facility if such technology has been field-proven at the time of the review.
  - Accuracy of the SPCC Plan as compared to the current Facility operation and SPCC Regulations.
  - Capacity and structural integrity of secondary containment structures.
  - SPCC inspection and record files to ensure continuity for a minimum period of three (3) years.

### *Training and Emergencies*

Opportunities to review the Plan may arise from regularly scheduled training sessions or actual emergencies which require the activation of the Plan.

Examples of these types of training opportunities may occur during:

- New employee orientation and training
- Tabletop exercises
- Emergency and oil spill response drills
- Boom deployment drills at the wharf
- Actual emergency responses

## 1.5 REGULATORY COMPLIANCE

This plan addresses the following regulatory requirements:

- This Spill Prevention, Control, and Countermeasure (SPCC) Plan has been prepared in accordance with Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112), "Oil Pollution Prevention," as amended November 13, 2009.
- These regulations require the preparation and implementation of an SPCC Plan for all non-transportation-related facilities that have discharged or could reasonably be expected to discharge oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.
- California Aboveground Storage Tank Act, Division 20, Chapter 6.67; Health and Safety Code Section 25270.3.
- The California Regional Water Quality Control Board, San Francisco Bay Region's Standard Provisions, Monitoring and Reporting Requirements for all NPDES permits, effective March 1, 2010, that require all permitted facilities to prepare and maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events.

A detailed cross-reference between the format of this Plan and that of the regulations is provided at the end of this document in "Cross Reference."

### ***General Applicability***

This requirement applies to owners or operators of non-transportation-related onshore and offshore facilities engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, and that meet each of the following criteria:

- Due to their location, could reasonably be expected to discharge oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines **and**;
- Has an aggregate aboveground storage capacity in excess of 1,320 gallons, excluding containers less than 55 gallons **or**;
- Completely buried storage capacity in excess of 42,000 gallons, excluding any tanks, connected underground piping, underground ancillary equipment, and containment systems subject to the technical requirements of 40 CFR Part 280 or 281.
- This SPCC Plan addresses procedures, measures, and systems used at the Facility to prevent and control oil spills. Responses to spills resulting from normal storage and transfer operations are addressed in the Facility's Oil Spill Response Plan (OSRP).



## 1.5 REGULATORY COMPLIANCE (Cont'd)

### *General Applicability (Cont'd)*

- Controlled copies of the OSRP are located at numerous locations throughout the Facility (i.e., Emergency Operations Center, Environmental Affairs Water Engineer's Office, etc.) and is also accessible to all personnel via the Shell Martinez Refinery Intranet (located under Regulatory Permits and Plans on the Environmental Affairs Home Page).

### *Submission of Spill Documentation*

The Facility shall submit the documentation required by 40 CFR Part 112.4 to the EPA Regional Administrator within sixty (60) days whenever the Facility has a discharge event(s) which meets one of the following conditions:

- Discharges more than 1,000 gallons of oil (or oil products) into or upon the navigable waters of the United States or adjoining shorelines in a single spill event or,
- Discharges more than 42 gallons of oil (or oil products) into the navigable waters of the United States in two (2) spill events within any 12-month period.

## 1.6 CONFORMANCE WITH OTHER REQUIREMENTS

The Facility conforms with the following other applicable discharge prevention and containment requirements:

- In addition to the Federal SPCC regulations, the Facility also complies with the State of California's Aboveground Petroleum Storage Act which requires Facilities to develop an SPCC plan in accordance with the guidelines set forth in 40 CFR 112.
- The California Regional Water Quality Control Board, San Francisco Bay Region, requires NPDES permitted facilities to develop and maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events. This requirement is documented by the Region's Standard Provisions, Monitoring and Reporting Requirements, Standard Provisions, Section 1.C.2 as adopted on February 10, 2010 and effective March 1, 2010.

## 1.7 IMPRACTICABILITY

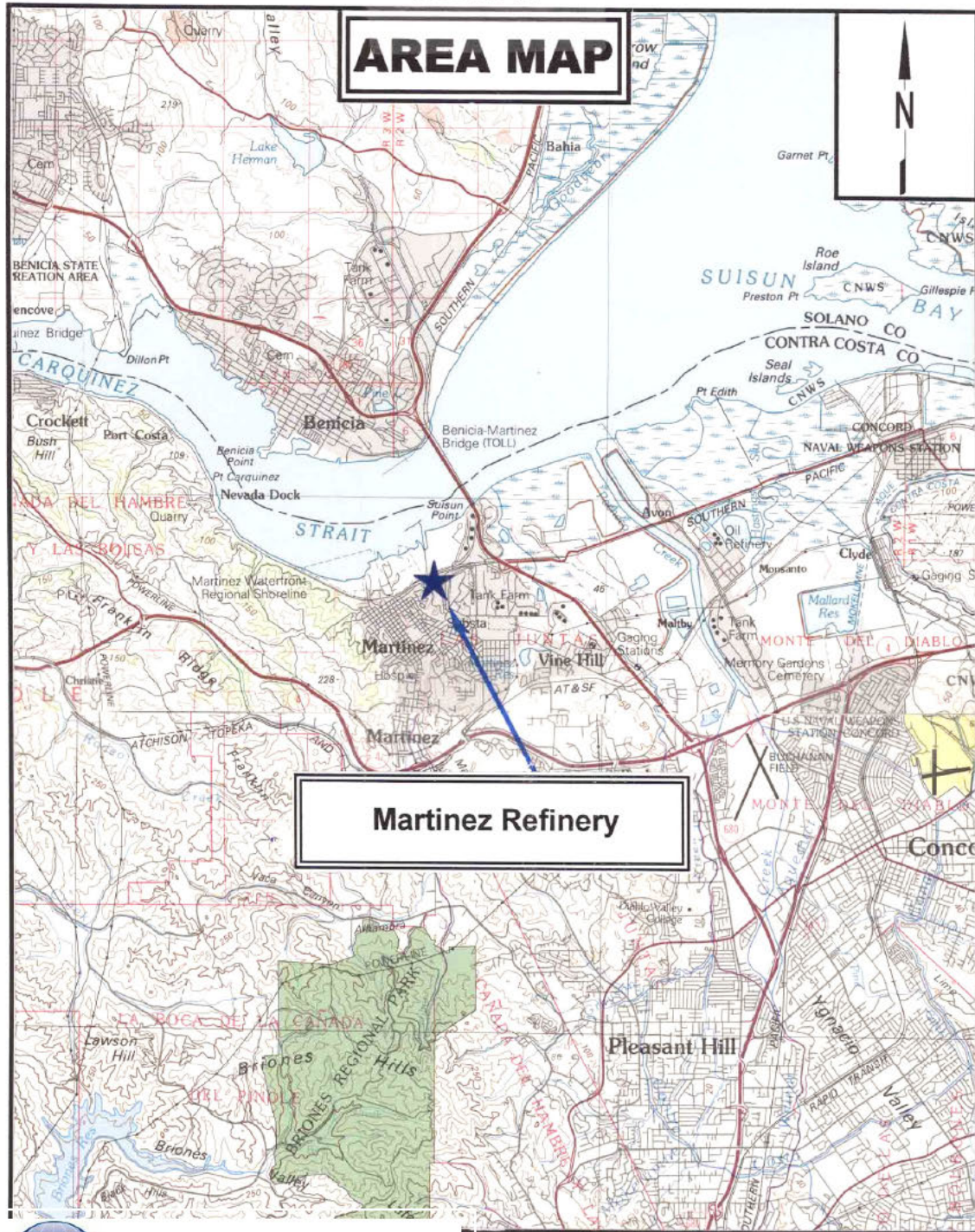
The Containment and/or diversionary structures or equipment to prevent a discharge are not practicable for the following:

- These sections of piping are not practicable to contain because they cross public roads or are positioned such that drainage from the areas will not flow into the Refinery's stormwater treatment facilities.
  - East/West pipeway just north of the flare pond near the T-head.
  - North/South pipeway south of Sphere 1342.
  - The effluent and firewater lines north of Tank 12.
  - Pipeway crossing over the Shell Avenue bridge near DSU.

## 1.7 IMPRACTICABILITY (Cont'd)

- Due to the impracticability of the piping above, an oil spill contingency plan is addressed by the Oil Spill Response Plan.
- Controlled copies of the OSRP are located at numerous locations throughout the Facility (i.e, Emergency Operations Center, Environmental Affairs Water Engineer's Office, etc.) and is also accessible to all personnel via the Shell Martinez Refinery Intranet (located under Regulatory Permits and Plans on the Environmental Affairs Home Page).
- These areas of the Facility are subject to daily visual checks by Logistics personnel in accordance with the *Daily Pipeway Observation Checklist (Effluent Treating Work Instruction ETP-6080)*.
- These sections of piping are subject to a thickness test every five (5) years.
- In the event of an oil spill, a written commitment of manpower, equipment and materials equipped to expeditiously control and remove any quantity of oil discharged is included in this plan.

FIGURE 1.1



## 2.0 NOTIFICATION AND RESPONSE PROCEDURES

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This section is a guide for notification and response procedures that should be implemented immediately after discovering a discharge incident and securing the source (if at all possible). All notifications are of extreme importance and must be completed in a timely manner.

### 2.1 COUNTERMEASURES

The Facility discharge discovery, response and cleanup capabilities are described as follows:

- The discharge discovery capabilities of the Facility are provided by the engineering controls (see Sections 4, 5, 6, 7, and 8) and the training and inspection programs (see Section 3) in place at the Facility.
- The discharge response and notification capabilities of the Facility have been summarized in this Section.
- The Facility has an Oil Spill Response Plan (also known as the Facility Response Plan or FRP) in place which provides considerably more details about the Facility's response capabilities. Controlled copies of the OSRP are located at numerous locations throughout the Facility (i.e., Emergency Operations Center, Environmental Affairs Water Engineer's Office, etc.) and is also accessible to all personnel via the Shell Martinez Refinery Intranet (located under Regulatory Permits and Plans on the Environmental Affairs Home Page).
- This Plan provides more details about the Facility's spill notification procedures, response actions, clean-up capabilities (including contractor capabilities), response equipment available at the Facility, response equipment available by nearby contractors, the Facility's response team organization and the Shell Emergency Management organization. This Plan also includes portions of the San Francisco Bay Area Contingency Plan that identify nearby environmentally sensitive areas and protection measures.

### 2.2 INTERNAL NOTIFICATION

- In accordance with the Facility's Environmental Procedure EP 1.1 for the Initial Reporting of any Environmental Incidents, the on-scene Facility employee shall immediately address any Health and Safety concerns, call ambulance/fire response resources if needed and report the incident as soon as possible to Security. Further notification and reporting to Facility management staff will also be provided as appropriate.
- In accordance with the Facility's Environmental Procedure EP 3.3 for the Oil Spill Response Plan, in addition to the above requirements for any spill with the potential for off-site impacts (including surface waters), the on-scene Facility employee shall notify Security personnel who will also notify the Logistics Shift Team Leader and Dispatcher. Security will then initiate notifications for members of the Oil Spill Response Team and the Qualified Individuals listed in the Oil Spill Response Plan.

## 2.3 EXTERNAL NOTIFICATION

- **In accordance with the Facility's Environmental Procedure EP 1.3 for Agency Notification Requirements**, the Refinery Team Leader, Environmental Duty person or another company-designated Liaison officer shall provide all necessary external agency notifications in accordance with federal, state, and local regulation.
- A "Notification Data Sheet" (Figure 2.2) or similar shall be completed by one of the above Facility representatives and used to facilitate documentation and data retrieval for these notifications.



FIGURE 2.1

NOTIFICATION REFERENCES			
FACILITY/NAME	ADDRESS	OFFICE	OTHER
Shell Martinez Refinery	3485 Pacheco Blvd. Martinez, CA 94553	(925) 313-3000	
Tom Rizzo - Refinery Manager	3485 Pacheco Blvd. Martinez, CA 94553	(b) (6)	(b) (6)
Thor Nygaard - Production Manager	3485 Pacheco Blvd. Martinez, CA 94553	(b) (6)	(b) (6)
AGENCY	ADDRESS	PRIMARY	ALTERNATE
National Response Center	C/O U.S. Coast Guard (G-OPF) 2100 2 <sup>ND</sup> Street SW – Rm 2611 Washington, D.C. 20593-0001	(800) 424-8802	(202) 267-2675
U.S Environmental Protection Agency Region IX	75 Hawthorne St., San Francisco, CA 94105	(800) 300-2193	(866) 372-9378
USCG Sector San Francisco	1 Yerba Buena Island, San Francisco, CA 94130	(415) 399-3547	(415) 399-3300
California State Emergency Response Commission c/o California Governor's Office of Emergency Services, Hazardous Materials Section	3650 Schriever Avenue, Mather, CA 95655	(800) 852-7550	(916) 845-8911
Contra Costa County Office of Emergency Services	50 Glacier Dr, Martinez, CA 94553	(925) 228-5000	
Contra Costa County Fire Protection District	2010 Geary Road, Pleasant Hill, CA 94523	(925) 933-1313	911
City of Martinez Police Department	525 Henrietta St, Martinez, CA 94553	(925) 228-4141	911
Contra Costa County Sheriff	651 Pine Street, 7th Floor, Martinez, CA 94553	(925) 228-8280	911
Contra Costa County Health Services, Hazardous Materials (CUPA)	4585 Pacheco Blvd. Martinez, CA 94553	(925) 335-3232	(925) 677-6700 (Pager)

FIGURE 2.1 (Cont'd)

NOTIFICATION REFERENCES (Cont'd)			
AGENCY	ADDRESS	PRIMARY	ALTERNATE
SMR Oil Spill Response Team (via SMR Security)	3485 Pacheco Blvd. Martinez, CA 94553	(925) 313-3601	
<p style="text-align: center;"><b><u>SPILL REPORTING GUIDELINES</u></b></p> <ul style="list-style-type: none"> <li>● Never include information which has <b><u>not been verified.</u></b></li> <li>● <b><u>Never speculate</u></b> as to the cause of an incident or make any acknowledgment of liability.</li> <li>● <b><u>DOCUMENT:</u></b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Agency notified</li> <li><input type="checkbox"/> Time agency notified</li> <li><input type="checkbox"/> Person notified</li> <li><input type="checkbox"/> Content of message given</li> </ul> </li> <li>● <b><u>DO NOT DELAY</u></b> reporting due to incomplete information.</li> </ul>			
See Oil Spill Contingency Plan for other notifications.			

FIGURE 2.2

NOTIFICATION DATA SHEET					
Date of Incident: _____			Time of Incident: _____		
INCIDENT DESCRIPTION					
Reporter's Full Name: _____			Position: _____		
Day Phone Number: (925) 313-3000			Evening Phone Number: _____		
Company: Shell Martinez Refinery			Organization Type: _____		
Facility Address: 3485 Pacheco Boulevard Martinez, CA 94553-0071			Owner's Address: _____		
Facility Latitude: _____			Facility Longitude: _____		
Incident Address/Location: _____ (if not at Facility): _____					
On-Scene Weather Conditions: _____					
Responsible Party's Name: _____			Phone Number: _____		
Responsible Party's Address: _____					
Source and/or cause of incident: _____					
Nearest City: _____					
County/Parish: Contra Costa County		State: _____		Zip code: _____	
Section: _____		Township: _____		Range: _____	
Distance from City: _____		Unit of Measure: _____		Direction from City: _____	
Container Type: _____		Container Storage Capacity: _____		Unit of Measure: _____	
Facility Oil Storage Capacity: _____		Unit of Measure: Gallons		_____	
Were Materials Discharged? _____ (Y/N)		Confidential? _____ (Y/N)		_____	
CHRIS Code	Total Quantity Released	Unit of Measure	Water Impact (YES or NO)	Quantity into Water	Unit of Measure
RESPONSE ACTION(S)					
Action(s) taken to Correct, Control, or Mitigate Incident: _____					
Number of Injuries: _____			Number of Deaths: _____		
Evacuation(s): _____ (Y/N) Number Evacuated: _____					
Was there any damage? _____ (Y/N) Medium Affected: _____					
Description: _____					
More Information about Medium: _____					
CALLER NOTIFICATIONS					
National Response Center (NRC): 1-800-424-8802					
Additional Notifications (Circle all applicable): USCG    EPA    State    Other					
Describe: _____					
NRC Incident Assigned No: _____					
ADDITIONAL INFORMATION					
Any information about the incident not recorded elsewhere in this report: _____					
Meeting Federal Obligations to Report? _____ (Y/N) Date Called: _____					
Calling for Responsible Party? _____ (Y/N) Time Called: _____					
NOTE: DO NOT DELAY NOTIFICATION PENDING COLLECTION OF ALL INFORMATION.					



## 2.4 RESPONSE PROCEDURES

Initial response actions are those taken by local personnel immediately upon becoming aware of a discharge or emergency incident. Timely implementation of these initial steps is of the utmost importance because they can greatly affect the overall response operation.

It is important to note that **these actions are intended only as guidelines**. The appropriate response to a particular incident may vary depending on the nature and severity of the incident and on other factors that are not readily addressed. Note that, **without exception, personnel and public safety is first priority**.

The first Facility person on scene will function as the person-in-charge until relieved by an authorized supervisor. Transfer of command will take place as more senior management respond to the incident.

### INITIAL RESPONSE ACTIONS - SUMMARY

- Assume responsibility and control of the situation.
- Assess the incident - Personnel and Public Safety is first priority. Provide immediate aid to the injured.
- Eliminate any sources of ignition.
- Isolate the source of a discharge, eliminate, or minimize further flow and initiate containment.
- Conduct immediate notification to activate the Emergency Broadcast System and mobilize the Spill Management Team or Local Response Team, Fire Department, or Hazmat Team as necessary.
- Notify federal/state/local agencies and other contacts per notification tables in Section 2 (NRC, FOSC, etc.).
- Control the area - Evacuate as needed and prevent personnel from entering the area until trained responders have arrived.

## 2.5 DISPOSAL METHODS

The Facility has established the following methods of disposal for recovered materials in accordance with applicable legal requirements:

- The primary option is to recycle any product as circumstances allow.
- If this is not an option, the recovered products will be segregated into the appropriate waste streams (Oily - Liquid Wastes, Non-Oily - Liquid Wastes, Solid Wastes, Oily - Solid/Semi-Solid Wastes, Non-Oily - Solid/Semi-Solid Wastes) and disposed of as dictated by local, state, or federal requirements.
- The Facility's Oil Spill Response Plan (OSRP), also known as the Facility Response Plan (FRP), provides additional disposal plan detail.

## 2.5 DISPOSAL METHODS (Cont'd)

- Controlled copies of the OSRP are located at numerous locations throughout the Facility (i.e, Emergency Operations Center, Environmental Affairs Water Engineer's Office, etc.) and is also accessible to all personnel via the Shell Martinez Refinery Intranet (located under Regulatory Permits and Plans on the Environmental Affairs Home Page).

## 2.6 PREVENTION

In general, the Facility's oil management program includes three major elements:

- Awareness – All facility employees who handle oil are trained on the hazards of crude oil and petroleum products to their health & safety and to the environment in the event of a release;
- Prevention – All Facility employees who handle oil are trained on the primary equipment, systems, procedures, etc. that are necessary to prevent releases of oil and the secondary/tertiary containment systems throughout the Facility to prevent any releases from reaching a surface water; and
- Response – All Facility employees who handle oil are trained on the need to promptly report any releases of oil and activate appropriate oil spill response resources.

While the Oil Spill Response Plan further describes the Response functions, the remainder of this SPCC Plan focuses on the Awareness and Prevention elements as further described below:

### Awareness

- The Facility's training, briefing and exercise programs ensure all oil-handling personnel are familiar with the Plan, understand their roles and responsibilities regarding proper oil containment and handling, are capable of reporting a release and are capable of activating oil spill response resources when necessary (see Section 3).

### Prevention

- The Facility has been designed and is being operated, maintained and inspected in order to prevent discharges as described in this Plan (see Sections 4, 5, 6 and 7).
- The Facility has completed a series of risk assessments and projects to upgrade secondary and tertiary containment systems (see Section 5.2.3).



**2.6 PREVENTION (Cont'd)**

- The Facility's piping systems have been installed and are being operated, maintained and inspected in order to prevent spills (see Section 6).
- Facility personnel are properly handling oils and petroleum products, conducting loading/unloading operations and inspecting vehicles prior to filling and departure in order to prevent spills (see Section 7).
- The Facility includes and maintains adequate Security measures to prevent access of unauthorized persons to the Facility (see Section 8).

## 3.0 TRAINING AND INSPECTIONS

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### 3.1 PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES

The Facility conducts extensive training for its oil handling personnel including environmental protection and proper operating procedures to prevent the discharge of any oil or other hazardous material to water or the discharge of any permitted emission above permit limits.

#### 3.1.1 General Facility Procedures and Training Practices

Most training is based on Facility procedures and their associated work instructions. The four main types of procedures that are applicable to this Plan are listed below, in order of specificity:

- *Environmental Procedures (EP)*
- *Field Requirements Manual (FRMS)*
- *Operating Procedures (designated by work area)*
- *Work Instructions*

Within the Facility, employee training programs include the following formats:

- Computer-based Training
- Classroom Instructions
- On-the-job Training (Operations and Maintenance)
- Table-top and Field Exercises

All Facility Operators must complete training and demonstrate competence to initially qualify for their jobs. This includes completing modules for specific job classifications, using a variety of the methods described above. Operators must requalify for their positions every three years. Much of the training on spill prevention and control is embedded in the Operator Qualification process.

Contractors who have unescorted access to the Facility must complete a general refinery Health, Safety, Security and Environmental (HSSE) overview course (e.g. BATC) and the Facility's Site-Specific Contractor HSSE Orientation. This includes awareness and proper containment of hazardous materials and the immediate reporting of any spills. Site-Specific Training must be repeated annually. The Contractor Health Safety Security and Environmental Manual is used as a training guide for the site-specific course.

Training records are maintained at the Facility for a minimum period of three (3) years. Most of these training records are managed electronically by Facility Learning and Development (L&D) staff. Records for site-specific training attended by Facility contractors are maintained by Facility engineering staff. Job-specific training records for contractors are maintained by the contractor company.

In accordance with both Federal and State Oil Spill Response Plan requirements, following eligible training such as table-top drills, oil spill response drills, boom deployment exercises, actual spill response activities, etc., Facility personnel submits documentation to the CA Fish and Game Office of Spill Prevention and Response (OSPR) for drill credit. Additional documentation for these events, correspondence with CA F&G OSPR and drill credit letters are maintained at the Facility for a minimum of three (3) years.

### 3.1 PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES (Cont'd)

The following sections provide more detailed information for specific groups of Facility and other employees.

#### 3.1.2 Training for all Oil Handling Personnel

Facility personnel who routinely work outside of office areas have the potential to discover releases. Facility employees and contractors are provided basic training on spill prevention and release reporting:

- All Facility employees receive initial and annual on-line training on EP 1.1 – Initial Reporting of Environmental Incidents (course 00023680); and
- All contractors receive training initially and annually in the Site-Specific Contractor HSSE class.

Facility operations and maintenance craft personnel (oil handling personnel) receive the following new hire classroom training:

- *A general review of Facility operations, objectives, targets, etc.*
- *Operation and maintenance of equipment to prevent oil discharges;*
- *A review of the Facility's secondary and tertiary containment systems for bulk oil storage tanks;*
- *A review of oil spill prevention (State & Federal) laws and regulations;*
- *A review of the Facility's SPCC Plan and the Oil Spill Response Plan; and*
- *Oil discharge notification procedures and protocols.*

Oil handling personnel also meet the following annual training requirements specific to SPCC regulations either through on-line training or classroom instruction:

- *EP 1.1 – Initial Reporting of Environmental Incidents –On-line course 00023680;*
- *EP 3.2 – Spill Prevention and Stormwater Discharge Management – On-line course 00011079 – Includes the following training modules for specific work locations within the Facility:*
  - *EP 3.2 – General – All employees plus relevant addendum by location:*
    - *EP 3.2A – LOP addendum*
    - *EP 3.2B – OpCen Addendum*
    - *EP 3.2C – West Watershed Addendum*
    - *EP 3.2D – Logistics Addendum*
    - *EP 3.2E – Maintenance Addendum*

Oil-handling personnel include several groups of refinery employees, contractors and truck drivers who have job responsibilities that require more specific procedures, computer-based training, classroom instruction or on-the-job training in oil-handling, storage, transfers, spill prevention and spill response. In addition to the general awareness training listed above, these groups receive additional training relevant to SPCC regulations. These groups include the following:

### 3.1 PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES (Cont'd)

#### 3.1.2 Training for all Oil Handling Personnel (Cont'd)

- Logistics personnel
  - General tank farm and ETP training
  - Tank farm dike and stormwater release operations training
- Oil spill response personnel
- All contractors
- Vacuum truck drivers
- Truck drivers

The following sections describe additional training requirements for these personnel groups relevant to SPCC regulations and the SPCC Plan.

#### 3.1.3 Logistics Personnel – Tank Farm and ETP

Logistics personnel manage the receipt, storage, transfer and delivery of crude oils, intermediate products, residual products and finished products throughout the refinery. Logistics personnel also manage and operate the effluent treatment plant, wharf, and all truck and railroad loading racks. Operator qualification training for these jobs includes tasks that are relevant to SPCC requirements. Examples include:

- *Product Pumper Zones 1 and 2, Zone 1&2/Task Training Workbook/Lesson 2 – Gauging*
- *Product Pumper Zone 1, Zone 1/Task Training Workbook/Lesson 6– Emergency Procedures*
- *Product Pumper Zone 2, Zone 2/Task Training Workbook/Lesson 6– Emergency Procedures*
- *Tank 008 – Tankage High Gauge Responsibilities – Reference Document*
- *Tank 6009 – Gauging and Temperature Measurement Practices – Work Instruction*
- *Tank 6010 – Tank Operating Data – High and Low Gauge Limitation – Work Instruction*
- *Monthly Call Card/L062006P – Monthly Tank Inspections*
- *Tank 032 – Independent High Level Alarm (IHLA) System for Tanks – Reference Document*

All procedures and work instructions are accessible on-line by Facility personnel.

### 3.1 PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES (Cont'd)

#### 3.1.4 Logistics Personnel – Stormwater Release Operations

In addition to prescribing requirements for the management of oils, SPCC regulations also prescribe regulations for the inspection of stormwater from tank dikes and other locations prior to its release from a regulated facility. The objective of these regulations is to control and prevent the discharge of oil that may have accumulated in these areas into surface waters. Logistics staff (Zone 1 and Zone 2 operators) manages these operations. Upon employment or reassignment, Logistics staff must learn and become certified in their assigned work instructions and training modules and conduct refresher training every three years. The following list includes examples some of the procedures and training materials for these operations:

- *C(F)-11 – Operation of Tank Drain Valves – Procedure*
- *Product Pumper, Zone 1 – Zone 1/Task Workbook/Objective 27-33 – Stormy Weather Procedures – Training Module*
- *Product Pumper Zone 2 – Zone 2/Task Training Workbook/Objective 27-33 – Stormy Weather Procedures – Training Module*
- *Tank 6094 – Inspection and Sampling of Stormwater Discharge Points – Work Instruction*
- *ETP 3370 – Stormwater Discharge Sampling – Procedure*

#### 3.1.5 Oil Spill Response Personnel

In the event of a release of oil to surface water, the refinery maintains an Oil Spill Response Team and an Oil Spill Response Plan. This team consists of representatives of numerous departments across the refinery. The primary function of this team is to initiate and coordinate all oil spill response activities as needed from initial report to the conclusion of the incident to the cleanup and disposal of all residual materials in accordance with the Plan. Members of this team receive additional procedure training, refresher training, field exercises, table-top exercises, and classroom instruction. The following list summarizes the additional training and response exercises for this team:

- *EP 3.3 – Oil Spill Response Plan – Procedure*
- *EP 3.3 – Oil Spill Contingency Plan – Online training course 00023675 – Every three years*
- *Qualified Individual and Oil Spill Response Team - Test pager notifications – Quarterly*
- *Hazwoper and Oil Spill Response Refresher – Classroom instruction – Powerpoint presentation and discussion – Annually*
- *Oil Spill Drill – Tabletop and field exercise of oil spill response plan – Classroom refresher and field response drills - Annually*

### 3.1 PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES (Cont'd)

#### 3.1.5 Oil Spill Response Personnel (Cont'd)

- *Oil Spill Boat Drill – Classroom and field instruction for Wharf Person in Charge (WPIC) and other Logistics positions - Quarterly*
- *Oil Spill Boom Deployment – Field instruction for WPIC and other Logistics positions - Quarterly*
- *Oil Spill Network Drill – Corporate and Regional Oil Spill Response Team drill – Travel to drill location or periodically conduct drill at Martinez – Regional Oil Spill Response Team - Annually*
- *WHRF 4100 – Wharf Emergency Response – Procedure*
- *TANK 4110 – Oil Spill Emergency Response – Procedure*

#### 3.1.6 Vacuum Truck Operators

Vacuum truck operators provide essential services within the refinery that include the management of oils, wastewaters, recovered oil, sludges and other residuals. These services include the transfer of oils and products within the refinery and the cleanup of spills and resulting contaminated soil. In addition to contractor orientation, all vacuum truck operators receive initial 40 hour HAZWOPER training and annual 8 hour HAZWOPER refresher training. Vacuum truck operators also receive instruction and training on the governing procedure for vacuum truck operation in the refinery: I(F)-44 – Safe Operation of Vacuum Trucks.

#### 3.1.7 Truck Drivers

Truck drivers who perform loading and unloading activities at the Facility are the interface between the Facility's oil-handling personnel and DOT-related activities. Truck drivers who utilize loading and unloading equipment within the Facility are appropriately trained to carry out their activities in a safe and environmentally sound manner.

Each operating department is responsible for providing training (procedures, work instructions and other on-the-job training) for all bulk truck drivers who enter the Facility to load or unload materials, including lube oils and containers of various petroleum products.

New truck drivers receive initial training prior to being approved to load/unload at the Facility. The initial truck driver training program includes:

- Facility safety rules and loading rack orientation;
- Proper loading/unloading procedures and hazards identification;
- Loading rack emergency shutdown systems;
- Emergency response actions steps and notification numbers;
- Emergency routes; and
- Spill reporting.

## 3.2 INSPECTIONS, TESTS AND RECORDS

The Facility's testing and inspection program is as follows:

### 3.2.1 Container Testing and Inspections – Aboveground Tanks

- All aboveground containers are integrity tested by certified inspectors of the refinery's Pressure Equipment Integrity department on a regular schedule (as dictated by API 653 risk scoring standards) and when material repairs are made.
- The refinery's container integrity testing program incorporates the standards of API 653, OSHA's Process Safety Management (PSM) program, and Shell's Corporate Inspection Guideline and Procedure (IGP 4.1) Program. Methods of engineering inspection include visual, pitting measurement, x-ray, ultrasonic thickness testing and other non-destructive examination methods.
- Operations personnel perform informal inspections (observations) of the tank exteriors during their normal daily activities within the tank farm. During the above inspections, any observed conditions which may be considered unsafe or potentially in need of repair will be expeditiously reported to the appropriate supervisor or inspector and recorded in the operating records. Tank exteriors and surrounding areas are also visually inspected whenever oil is transferred in or out of the tank or water is drawn off the bottom.
- Operations personnel conduct monthly visual examinations of all aboveground storage tanks. During this inspection all sides of the tank are observed for leaks, drips, weeps, etc. that may be indicative of an integrity problem. Documentation of these inspections is maintained within Operations and Logistics department files.
- All leaks that are detected are investigated and the sources are promptly corrected.
- Tank vents are inspected consistent with at least the minimal requirements of API 576.
- Tank roofs have a maximum external inspection interval of one (1) year in accordance with CCR, Title 8, Division 1, Chapter 4, Subchapter 15, Article 9, Section 6803.
- For all storage tanks in active service, formal external inspections of storage tanks are conducted by inspectors at intervals not exceeding one fourth of their remaining life or every 5 years, whichever is less. Tanks may be in service during this inspection. Internal inspections are conducted by personnel at intervals based upon corrosion rates and experience with similar service histories in accordance with API 653. Refinery logistics and operating personnel also conduct a monthly call-card inspection of all active storage tanks.



## 3.2 INSPECTIONS, TESTS AND RECORDS (Cont'd)

### 3.2.1 Container Testing and Inspections – Aboveground Tanks (Cont'd)

- For all storage tanks in inactive service, formal external inspections of storage tanks are conducted by inspectors at intervals not exceeding one half of their remaining life or every 10 years, whichever is less, in accordance with API 653. Refinery operating personnel also conduct a monthly call-card inspection of all inactive storage tanks.
- The Shell Martinez Refinery includes an extensive network of over 400 active groundwater monitoring wells and additional groundwater recovery wells and extraction trenches. Many storage tanks also have soil vapor leak detection systems. Together, these monitoring systems provide an additional leak detection mechanism for floor leaks from aboveground storage tanks.
- An inspection and maintenance program is in place to periodically test the level control, alarm, and gauging systems on the refinery tanks. Additionally, liquid level sensors are regularly checked against physical measurements during product transfers to verify accurate sensor readings. Liquid level sensors are calibrated if discrepancies are noted.
- Inspections of internal and external floating roofs for apparent condition of pontoons, seals, shoes, Pressure Relief Valves (PRV's), Pressure Vacuum Valves (PVV's), fittings, anti-rotation devices, sumps and drains, electrical grounds, shell wear and grooving, internal stairways, etc. are performed by qualified technicians and at intervals based on the product stored, past inspections, tank age and condition, and other individual variables. The intervals are also based on past experience that will assure proper maintenance and safe operations.
- Cathodic protection systems for aboveground storage tanks are checked bi-annually.
- Comparative inspection and testing records are maintained for the life of all aboveground storage tanks.

### 3.2.2 Container Testing and Inspections – Shop-built Fixed and Portable Tanks

- Facility staff has completed a refinery-wide assessment to identify all shop-built oil storage tanks and portable oil storage containers with a storage volume of 55 gallons or more. Appendix A, Table A.2 provides an inventory of these containers. Appendix D, Figure D.2 provides a refinery plot plan with the location of these shop-built tanks or portable container storage areas. Most of these shop-built containers hold 300 and 500 gallons of lube oils. Most of the portable containers consist of 55 gallon drums of lube oils. A few other varieties of both shop-built and portable containers also exist throughout the refinery.

## 3.2 INSPECTIONS, TESTS AND RECORDS (Cont'd)

### 3.2.2 Container Testing and Inspections – Shop-built Fixed and Portable Tanks (Cont'd)

- For shop-built tanks, Facility Inspection staff utilizes API-653 as a guide to prescribe an appropriate level of integrity inspection and testing. All Facility tank inspectors are certified by the American Petroleum Institute or other industry standard as appropriate to the tank/container type. While most shop-built tanks are too small to physically enter for internal inspections, inspection staff generally follows API-653 protocols for external visual, ultrasonic and other inspection techniques and inspection frequencies as needed. Nearly all shop-built tanks are set on saddles or other support stands that elevate the tanks at least several inches above a concrete refinery process pad, asphalt pad or concrete shop floor. While these tanks cannot be entered, the underside of these tanks can be externally inspected and tested. Any leaks discovered during these inspections or during routine operations would be immediately evident.
- If any temporary oil storage requirements are necessary and the shop-built or portable container cannot be placed onto a nearby concrete process pad or asphalt pad, an impermeable liner or containment tub (HDPE or similar material) will be placed on the ground before the tank is delivered and positioned. Such liners and tubs provide an aid to ongoing inspections and function as a release prevention barrier to ensure any release is contained and does not contact the ground.
- In addition to Facility Inspection staff, operating personnel are also knowledgeable of the storage operations, characteristics of the stored oils, the type of aboveground storage tank and its associated components. All shop-built and portable storage tanks are located in operating and functioning areas of the Facility and receive attention on an ongoing basis. The objectives of properly storing oils, preventing leaks/spills and immediately reporting any incident are thoroughly covered by ongoing training provided to employees involved in handling oil at the Facility. The routine inspections of these containers conducted as a result of these day to day operations will also detect any change in conditions or signs of product leakage from the tank, piping system, and appurtenances.
- The Refinery ensures that drums, totes, and tanks owned by third party contractors and/or suppliers that are brought on-site are built or tested to the standard(s) or in-process inspection and testing procedures established by the drum manufacturer or the drum recycler.

## 3.2 INSPECTIONS, TESTS AND RECORDS (Cont'd)

### 3.2.2 Container Testing and Inspections – Shop-built Fixed and Portable Tanks (Cont'd)

- If any signs of leakage or deterioration from a shop-built tank are observed by Facility personnel, the tank will be inspected by a tank inspector. The physical configuration and placement of these tanks, ongoing attention to these tanks by operating personnel, and actual tank inspection data will ensure that any small leak that could develop in the tank shell will be detected before it can become significant, escape secondary containment, and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell integrity testing.
- If any leak or spill of any oil from a shop-built or portable container occurs, Facility personnel will provide the appropriate internal notifications described by section 2.2 (and if necessary external notifications described by section 2.3). For any reported leak or spill of a petroleum hydrocarbon or other hazardous material, an online FIM report will be submitted and additional investigations will be completed if needed based on the specific nature and consequences of the incident.

### 3.2.3 Valves and Pipelines Inspections

The Facility's valves and pipelines are examined as follows:

- Process piping is evaluated for corrosion consistent with API 570. Operators make frequent visits to the manifolds in the course of their normal work. Piping in undiked areas is externally and ultrasonically inspected every five years for corrosion or unusual stress. Daily inspections of piping in undiked areas are conducted according with the *Daily Pipeway Observation Checklist (Effluent Treating Work Instruction ETP-6080)*.
- The Refinery's procedures also specify that prior to returning equipment to service after routine maintenance or after turnarounds, all openings not required for routine use such as bleeders, drains and vents that could allow a release of hydrocarbons to the environment must be blinded, plugged, or capped to prevent inadvertent leakage of material
- The Facility has identified several areas that contain piping located outside of secondary containment. As discussed in Section 4.2 these sections of piping are visually inspected daily and documented by the *Daily Pipeway Observation Checklist (Effluent Treating Work Instruction ETP-6080)*. These sections of piping are also subject to a thickness test every five (5) years.
- The outer surfaces of aboveground pipelines are painted to provide external corrosion control. Internal pipeline corrosion is addressed through the inspection, testing, and maintenance programs.

## 3.2 INSPECTIONS, TESTS AND RECORDS (Cont'd)

### 3.2.3 Valves and Pipelines Inspections (Cont'd)

- All process piping at the wharf is hydrotested every year in accordance with a memorandum of understanding between the Shell Martinez Refinery, the U.S. Coast Guard and the California State Lands Commission.
- All process piping at the wharf is evaluated by an operational hydrostatic test every year in accordance with current U.S. Coast Guard requirements.
- Pressure relief valves (PRVs) are installed on process piping where necessary. The PRVs are designed to prevent damage to the pipelines in the event a valve is closed inadvertently during transfers or not opened prior to pump start-up. The PRVs are preset to automatically open at a certain pressure dependent on the design and/or operating pressure of the particular pipeline. The PRVs are set to the maximum allowable working pressure for that line. Once open, the valves relieve into a containment system, tank, or sewer system.
- Each pipeline is equipped with one or more manual or motor-operated block valves to stop the flow of oil at various locations depending on the use and configuration of the pipeline. Block valves are normally situated at the pipeline's connection to a storage tank or, if present, a manifold.

### 3.2.4 Documentation and Recordkeeping

#### Inspection Recordkeeping

A variety of inspection, testing, and maintenance records are kept at the Facility depending on the type of activity and equipment involved. The location within the plant where the records are maintained will also vary depending on the activity. In general, most inspection and testing records are maintained within Pressure Equipment Inspection Department files whereas maintenance related records are maintained with Central Maintenance Department files. Records associated with permit/regulatory compliance issues are maintained with Environmental Affairs files. Records associated with operational inspections are maintained by the respective operating departments. These records may include a combination of electronic records and paper records and files.

## SECTION 4.0 FACILITY DRAINAGE

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The Facility's 858 acres are divided into six (6) watershed areas. These watersheds, illustrated in Figure 4.1, are designated as follows:

- West Watershed Area
- Lake Slobodnik Watershed Area
- Flare Watershed Area
- Vine Hill Watershed Area
- LPG Storage Watershed Area
- Central Maintenance/Shops Watershed Area

In general, all of the Facility west of Shell Avenue is in the West Watershed Area while portions of the Facility east of Shell Avenue are divided among the remaining five (5) watershed areas. Each watershed area is subdivided into interconnected minor drainage basins based on topography.

### 4.1 DIKED STORAGE AREA DRAINAGE SYSTEMS

#### Drainage from Diked Storage Areas

Drainage of stormwater or other liquids accumulated within the Facility's diked storage areas are controlled as follows:

- All stormwater drainage from secondary containment areas is directed to the Effluent Treatment Plant (ETP) or to one of the stormwater retention ponds. There is no direct drainage off-site from the tank farms.
- The small volumes of stormwater that accumulate within the secondary containment areas from light rainfall events are usually allowed to percolate or evaporate. The larger volumes of stormwater that accumulate from moderate to heavy rainfall events are drained to the ETP or one of the stormwater retention ponds. Section 3.1.4 lists the relevant operating procedures.
- Any contaminated stormwater within diked areas, pipeways or other locations is removed by vacuum truck or portable pumps, managed appropriately and directed to the ETP.
- Flapper-type drain valves are not used to drain diked areas.
- The preferred method of removal of accumulated stormwater is by natural evaporation providing that the accumulation does not damage the equipment/structures or inhibit operations conducted within the containment area.
- Tank farm Facility drainage does not flow directly into an open watercourse.
- All drainage from the West Watershed Area is routed to the Effluent Treatment Plant via the process sewer system. Flow within the process sewer system is by gravity, although there are some small lift-stations for process and storm water that are fed into the process system.



## 4.1 DIKED STORAGE AREA DRAINAGE SYSTEMS (Cont'd)

### Drainage from Diked Storage Areas (Cont'd)

- Drainage from the paved areas at Operations Central in the Lake Slobodnik Watershed Area flows by gravity through an oil/water separator prior to the Effluent Treatment Plant. Light Oil Processing area drainage passes through the Gross Oil Separator prior to the Effluent Treatment Plant.

## 4.2 UNDIKED AREA DRAINAGE SYSTEMS

- In general, all the Facility's land west of Shell Avenue functions as a single watershed while the area east of Shell Avenue is divided into five separate watersheds. Each of the watershed areas has been further subdivided into interconnected drainage basins based on topography and the process sewer and stormwater systems as shown in Figure 4.1.
- The watershed areas are drained by a system of storm and process sewers. All process and stormwater from the west watershed is routed to the Effluent Treatment Plant (ETP) for treatment prior to discharge to permitted outfall E-001. Runoff from the other five drainage watershed areas east of Shell Avenue is normally routed via storm sewers to retention ponds (except E-008 which is sheet flow) and then permitted outfalls E-002, E-004, E-005, E-007 and E-008 as described below. All discharges are monitored both before and during discharges to ensure compliance with the Facility's NPDES permit No. CA 0005789.

### *Major Drainage Areas and Permitted Discharge Points*

The Facility's NPDES permit specifies permit limits and conditions for a combination of treated refinery wastewater and stormwater directed to one outfall (E-001) and retained stormwater directed to five outfalls (E-002, E-004, E-005, E-007 and E-008). The following sections further describe these outfalls and their associated hydrologic drainage areas.

### 4.2.1 West Watershed – Effluent Treatment Plant (Discharge E-001)

- All process wastewaters from the refinery process units and tank farms and all stormwater runoff generated within refinery property west of Shell Avenue, paved areas of Operations Central (OPCEN) the Tank 8-12 string, the Distillates Saturation Unit, the Shell Products Terminal and the Shell Martinez Catalyst Plant (SMCP) flows to the ETP where it is treated and discharged along with all process wastewater from the Refinery. The Shell Products Terminal, the Shell Martinez Catalyst Plant and the Air Products and Chemicals, Inc. hydrogen plant (HP-3) are part of separate business units within Shell or a third-party that provide their own SPCC Plans for these facilities.
- Using temporary pumps and piping, contained stormwater from other areas of the Facility described below may also be treated and discharged via this outfall. This would be done if there is any evidence (e.g. equipment leaks, spills, observations) that contamination of impounded stormwater has occurred.

## 4.2 UNDIKED AREA DRAINAGE SYSTEMS (Cont'd)

### 4.2.2 Upper and Lower Lake Slobodnik System (Discharge E-002 from Lower Lake)

- Stormwater runoff from the following areas flows to the two ponds of the Upper Lake Slobodnik system:
  - the graveled areas of the OPCEN Processing Area
  - all tank levees east of OPCEN extending to the volatiles storage area
  - the Reservoir Pump House
  - the Light Oil Processing (LOP) Area stormwater, when diverted from the Low Point Sump
  - the Clean Fuels Processing Area via overflows of the low point sump
- The containment valve for the Upper Lake Slobodnik system is normally closed.
- Lower Lake Slobodnik receives direct drainage from the adjacent hillsides and provides additional containment capacity for the entire drainage basin. The Lower Lake Slobodnik also serves as a surge pond for discharges from the Upper Lake system.
- In the event of a spill or other incident, portable equipment can be deployed to skim and remove oil from this lake system. In the event this lake system fails to meet NPDES permit limits, temporary pumps can be deployed to direct this water over a few days to a process drain for treatment at the ETP.
- Stormwater from Lower Lake Slobodnik is normally discharged via outfall E-002 in compliance with the Facility's NPDES permit. From E-002, the stormwater is routed via underground piping to a drainage course near the Marina Vista on ramp to the southbound I-680 freeway. The stormwater then flows under I-680 and becomes part of the McNabney Marsh which is connected to the Carquinez Strait approximately ½ mile east of the Benicia-Martinez Bridge.
- A tide gate, within adjacent property owned by Rhodia, controls the flow of waters between the Carquinez Strait and McNabney Marsh. In the event of an oil spill, this tide gate can be closed and temporarily used to prevent any interchange of water between the Carquinez Strait and the marsh. In the event of a spill to water, refinery staff would contact Rhodia representatives to direct this effort.

## 4.2 UNDIKED AREA DRAINAGE SYSTEMS (Cont'd)

### 4.2.3 Vine Hill Pond System (Discharge E-004)

- The watershed draining to the two Vine Hill stormwater containment ponds includes all the tank levees and pipe rows in the area as well as the roads and vegetated hillsides.
- Discharges from the northern Vine Hill Pond join a natural drainage course which receives water from a large Contra Costa County storm culvert that emerges from underground just south of the Flare Area Pond. This drainage course is routed generally northeast through Shell property and also receives flows from outfalls E-005 and E-007 as well as the Mountain View Sanitary District on the north side of the Facility. This drainage course then flows under the I-680 freeway and becomes part of McNabney Marsh which is connected to the Carquinez Strait approximately ½ mile east of the Benicia-Martinez Bridge.

### 4.2.4 Flare Area Pond (Discharge E-005)

- Stormwater from the LOP flare area, the flare gas compressors, the maintenance dropout tank, part of the Alkylation Unit chemical storage, the heat exchanger bundle cleaning pad and the east-west pipe row is collected in a pond located east of the flare area.
- The pond discharges into the same drainage course as the Vine Hill Pond.

### 4.2.5 Volatiles Storage Area (Discharge E-007)

- Stormwater from the volatiles (propane/butane) storage area collects in a stormwater pond on the southern edge of the drainage basin prior to discharge. The pond discharge flows into the same drainage course as the Vine Hill and Flare Area Ponds.

### 4.2.6 Central Maintenance/Shops Area (Discharge E-008)

- Stormwater from the Central Maintenance shops area drains into a stormwater collection system with approximately 35 catch basins. These catch basins drain stormwater to a 24" diameter storm drain (E-008) that leads to a 10-foot diameter underground Contra Costa County flood control channel that enters a natural drainage course just south of the Flare Area Pond. This discharge of stormwater at outfall E-008 is permitted by the Facility's NPDES permit.
- Since stormwater from the Central Maintenance shops area does not flow into a stormwater retention basin, all portable oil drums and other containers in this area are stored within secondary containment devices (e.g. pallet tubs or other structures).

## 4.2 UNDIKED AREA DRAINAGE SYSTEMS (Cont'd)

### 4.2.6 Central Maintenance/Shops Area (Discharge E-008) (Cont'd)

- This flood control channel also receives stormwater runoff from a large drainage area in the City of Martinez along Pacheco Boulevard and areas to the south and conveys stormwater runoff into the same natural drainage course that receives releases from the Vine Hill and Flare Area Ponds. This portion of the City of Martinez includes numerous industrial parks, commercial buildings and businesses and residential housing. This flood control channel also receives occasional releases of water from the Martinez Reservoir that occur as a result of maintenance on their distribution system.

#### ***Other Minor Drainage Areas***

Stormwater from all other areas of Shell property drain indirectly to adjacent properties or to public roads in the form of sheet runoff. These areas do not include any oil storage or transfer operations. These minor drainage areas are shown as on Figure 4.1 and generally include:

- Vegetated areas on the outsides of tank levees on the refinery perimeter
- Employee parking lots
- Some areas bordering Marina Vista Avenue
- The majority of the piping is contained within the diked areas except for the sections noted by the *Daily Pipeway Observation Checklist (Effluent Treating Work Instruction ETP-6080)*. These areas were specifically identified as having the possibility of reaching navigable waters based on their positions within the Refinery. Most areas would be contained by diversionary structures such as curbs and berms, natural topography or the Facility drainage system. However, there are several sections of undiked piping that is not contained by any of those means listed above.
- Three of these sections, due to their locations, would be impracticable to contain and equivalent environmental measures have been developed as follows:
  - The piping is subject to visual inspections during daily operating rounds. These inspections call specific attention to the piping to ensure that inspecting personnel understand the importance of these areas. Inspections are documented and maintained at the Facility. More detail is provided in Section 3.2.
- The risks of leaks originating from piping is low since it is observed frequently enough to detect excessive corrosion, defective pipe supports, or other anomalies which could compromise the integrity of the pipe.

## 4.2 UNDIKED AREA DRAINAGE SYSTEMS (Cont'd)

### 4.2.6 Central Maintenance/Shops Area (Discharge E-008) (Cont'd)

#### *Other Minor Drainage Areas (Cont'd)*

- In the event that a spill did originate from undiked piping, the Facility would immediately activate its Oil Spill Response Plan (OSRP) to contain and mitigate the spill before leaving the property or reaching a surface water.

## 4.3 STORMWATER DRAINAGE PROCEDURES

- *Logistics Work Instruction TANK-6092 and Effluent Treating Operating Procedure ETP-3370* describe the procedures followed by Facility personnel for the proper handling and release of clean stormwater from locations throughout the Facility.
- Prior to releasing stormwater from a retention basin, check samples are analyzed by the Facility's Quality Assurance laboratory. If these results meet NPDES stormwater quality specifications, Logistics personnel open a valve on the outfall structure to release the impounded stormwater and record the opening water level elevation. Within the first 15 minutes of any release, samples are collected for NPDES permit compliance analysis by a commercial laboratory.
- These procedures require an operator remain present during the release of any stormwater from any stormwater impoundment. After closing the valve on the outfall structure, Logistics personnel record the closing water level elevation and calculate the release volume.
- Catchment basins are not located in areas subject to periodic flooding.
- Refinery wastewater and some commingled stormwaters are processed by the Effluent Treatment Plant and discharged in accordance with the Facility's NPDES Permit No. CA 0005789. This same permit authorizes the release of untreated stormwaters from outfalls E-002, E-004, E-005, E-007 and E-008 provided these releases meet stormwater quality specifications.

## 4.4 MONITORING PROGRAM

- All tanks storing fluids with a hydrocarbon content of ten percent or greater are either equipped with some type of leak detection monitoring system or are on a schedule to receive such a system following internal cleaning and inspection. The most common leak detection method is a vadose zone monitoring system. This system utilizes soil vapor probes that are permanently installed below the tank. The soil vapor from these probes are checked on a regular basis for any indication of a tank leak.



#### 4.4 MONITORING PROGRAM (Cont'd)

- If the vapor monitoring results or other evidence indicates a possible tank leak, a tank leak detection contractor can perform a more definitive leak detection tests. After adding a tracer chemical to the contents of the tank, soil vapor samples are recovered from the vadose zone under the tank using the soil vapor probes and analyzed over the next three days. Detection of the tracer chemical in the vadose zone would warrant further investigation and/or internal inspections of the tank to confirm the presence of a leak. Other leak detection methods include double bottom tanks with leak detection systems and the installation of tanks on foundations with integral leak detection systems.
- The Shell Martinez Refinery includes an extensive groundwater monitoring system and active groundwater remediation system. The groundwater monitoring program includes monthly gauging, quarterly sampling and analysis, semi-annual reporting, and annual modeling of groundwater recovery system effectiveness in accordance with San Francisco Bay Regional Water Quality Control Board No. R2-2013-0034 and R2-2014-0025.

**FIGURE 4.1**  
**FACILITY WATERSHED AREAS**



## SECTION 5.0 BULK STORAGE CONTAINERS

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### 5.1 CONTAINER DESIGN AND CONSTRUCTION

#### *Aboveground Bulk Storage Containers*

The Facility's bulk oil and oil products storage containers have the following design characteristics, materials of construction, and fail-safe engineering features:

##### 5.1.1 Construction

- Aboveground tanks used for oil storage are constructed of welded or riveted steel. All welded steel tanks were designed and constructed to comply with the API 650 specifications for welded steel oil storage tanks or other industry standards in place at the time of construction. These specifications cover the correct material, design, fabrication, erection, and testing requirements appropriate for tank operating conditions. In selected applications, heating coils are used inside the steel tanks. The outer surfaces of the tanks are painted to provide external corrosion control.
- The Facility has a strong aboveground storage tank integrity program which significantly increases the chances of detecting corrosion or anomalies in the tank shell before it becomes compromised. Section 3.2 provides more details on this tank integrity program.
- Fiberglass or plastic aboveground tanks are used to store chemical additives at the cooling towers and other operating areas within the plant. In selected applications, fiberglass liners are also used inside steel tanks. The materials for construction of these tanks were selected in accordance with materials and equipment specifications and vendor recommendations.
- Tank roof drains are designed to discharge into the process sewer.
- Tanks in all services are inspected and maintained consistent with API 653 as described in Section 3.2.1.

##### 5.1.2 Spill Prevention and Overfill Protection

The following devices or procedures are utilized to minimize the possibility of an oil spill from the refinery tankage.

- Telepulse gauging with data output and alarms to blending and tank farm control stations.
- Telepulse gauging data output to computer work stations.
- Independent high level alarms.
- Local level indicators.
- Local/Remote indicator alarm.
- Specified frequency manual gauging.

## 5.2 SECONDARY AND TERTIARY CONTAINMENT SYSTEMS

The following sections describe the Facility's secondary and tertiary containment systems for bulk oil storage containers. This section also describes a recent series of projects to evaluate and upgrade these systems.

### 5.2.1 Secondary Containment Systems

- Tank dikes within the Facility are constructed of earth or reinforced concrete. The majority of the tanks have dikes designed to provide a secondary containment capacity for the largest tank within the dike. Tank dikes that lack the size to independently contain the largest tank are supplemented by nearby tertiary containment systems. See section 5.2.2.
- Native soils within the Facility contain a mixture of fine-grained sand and clay particles. With compaction, these soils provide a structurally sound and low permeability material for berm construction that will contain any spilled oils and prevent lateral migration prior to discovery and oil recovery operations. In some areas of the Facility, berms, pipeways and hillsides have been coated with an asphalt emulsion or gunnite to minimize soil erosion. Where they exist, these materials will further lower or eliminate the possibility of berm penetration by any spilled oil.
- The list of oil spill prevention methods described by Section 3, together with the characteristics of the Facility's native soils, berm coatings, and rapid oil spill response capabilities minimize the probability of any significant product releases and then contain any significant releases that do occur within the berms or other portions of the Facility before reaching navigable water.
- Product releases from a container, piping or other Facility equipment would be detected during daily visual inspections and while conducting normal operations. In the event of a product release, response and recovery operations, including use of contract resources, would commence immediately upon detected as described in the Oil Spill Response Plan (OSRP).
- The Facility is equipped with a numerous groundwater monitoring wells and several groundwater recovery systems that provide a groundwater migration barrier against the subsurface migration of product or groundwater contamination from the Facility. These monitoring wells can be used to detect and monitor the potential impact or movement of a product release below the ground surface. In the event a significant spill, the recovery wells provide a means of keeping discharged product and other groundwater contaminants within the boundaries of the Facility. These recovery wells provide the additional response capability necessary for those underground facilities with no line of site inspection capability (tank bottoms, underground piping, etc.).

## 5.2 SECONDARY AND TERTIARY CONTAINMENT SYSTEMS (Cont'd)

### 5.2.2 Tertiary Containment Systems

- Tertiary containment refers to a collection of additional site-specific topographic features, drainage and containment features (natural or constructed) and all other devices that collectively prevent any spill or release that extends beyond the immediate secondary containment area from reaching a surface water.
- Within the facility, these tertiary containment systems include adjacent tank dikes, pipeways, combined oil/stormwater process drains, stormwater collection drains, effluent treatment ponds, emergency wastewater/oil storage tanks, stormwater containment ponds and other natural or constructed topographic and hydrologic features that prevent the discharge of oil to a surface water.
- At some locations within the facility, berms have constructed overflows or drains that combine the secondary containment capability of one tank dike system with the additional containment capability of an adjacent tank dike system or another topographic feature of the Facility. In the event of a catastrophic oil spill event, once the oil level within the immediate tank dike containment area reaches a predetermined high level, the oil would either intentionally overflow a section of the dike reinforced with concrete or asphalt or flow through an appropriately positioned and sized conduit and into an adjacent tertiary containment area.
- The attached spreadsheet in Appendix C.1 provides more information about these secondary and tertiary containment systems. This information identifies the secondary containment area or the combination of containment areas that provide full containment for the largest storage tank in every containment area.

## 5.3 COMPLETELY AND PARTIALLY BURIED TANKS

- The Facility has only one (1) UST for own-use gasoline consumption. The tank is regulated under California UST regulations and is, therefore, exempt from the SPCC program.

## 5.4 MOBILE OR PORTABLE OIL STORAGE CONTAINERS

- Mobile and portable oil storage containers are located throughout the Refinery.
- Secondary containment, such as dikes, catchment basins, or the effluent treatment facilities, is provided for the largest single compartment or container plus sufficient freeboard for precipitation.

## 5.5 INTERNAL HEATING COILS

- The condensed steam returns from internal heating coil exhaust lines either remain within condensate recovery systems for reuse a boiler feed water or discharge to the process sewer. Condensate from internal heating coils does not drain to open watercourses.



## **6.0 TRANSFER OPERATIONS, PUMPING, AND IN-PLANT PROCESS**

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### **6.1 PIPING INSTALLATIONS**

Most process piping at the Facility is constructed aboveground where it can be regularly observed during the course of normal operations. Aboveground piping may also be mounted in elevated pipe racks whose overhead clearance is sufficient to prevent damage by vehicles passing underneath.

### **6.2 PROTECTION OF UNDERGROUND PIPING**

- The Facility has limited buried piping that cross under roads and through tank dikes. Corrosion protection for all new and replaced buried piping will be provided as follows (Note: Cathodic protection may not be appropriate for all new or replaced piping if determined by a corrosion expert that the pipe is installed in a location not to be corrosive enough to cause it to have a release due to corrosion during its operating life).
  - All new or replaced piping will be protectively wrapped and coated.
  - New or replaced piping may be cathodically protected.
- When a pipe section is exposed, it will be examined and corrective action will be taken as necessary.
- Before any drilling or excavation work takes place for any project, Facility staff reviews the location of any buried piping, sewers, or utility lines within the work area and notifies an underground alert service.

### **6.3 OUT-OF-SERVICE PIPING**

- Out of service pipelines will be capped or blind flanged and marked to its origin in the event that a Facility pipeline is removed from service or is placed in standby status for an extended time.

### **6.4 VEHICLE WARNING PROCEDURES**

The procedures for warning vehicles entering the Facility to avoid damaging aboveground piping or other equipment are as follows:

- Personnel operating vehicles in the Facility are properly trained. Appropriate signs are also in place regarding safe vehicle usage.
- There is a maximum speed limit of 20 MPH throughout the Refinery, with specified areas of lower speed limits. All pipelines near roads have been barricaded, marked, or are clearly visible from a vehicle. In the unlikely event of a ruptured line due to damage by a vehicle, the oil would be contained within the Facility drainage or process sewer systems as described in Section 4.
- Selected areas of the refinery with overhead piping or other structures above roadways are marked with overhead clearances.

## **7.0 TANK CAR AND TANK TRUCK LOADING/UNLOADING RACK**

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### **7.1 FACILITY OPERATIONS**

The Facility's Tank Car and Tank Truck Loading/Unloading operations are conducted as follows:

- The Refinery relies on the Shell Oil Products Distribution Terminal for distributing a portion of refined petroleum products via truck from the Facility. This terminal is located across Marina Vista near the northwest corner of the facility. This terminal is covered by a separate SPCC Plan prepared by a separate business unit of Shell.
- There is currently one (1) inactive loading rack at the Facility which was used to load asphalt. The Utility Fuel Oil loading rack is currently idle but has the potential to be activated if needed.
- The Facility includes one (1) active LPG truck loading/unloading rack. Since this truck rack only handles LPG's, this rack is not subject to EPA SPCC regulations.
- The Facility includes several active railroad tank car loading/unloading racks. Since these railroad tank car loading/unloading racks only handle LPG's, they are not subject to SPCC regulations.

### **7.2 LOADING/UNLOADING AREA CONTAINMENT SYSTEM**

Prior to the filling and departure of any truck (vendor restocking/equipment maintenance/filling, etc.), the following are completed:

- Drains and outlets on the trucks are examined for leakage before offloading or departure.
- Any sign of leakage is immediately repaired (tightening, adjusting, or replacing) to prevent liquid leakage while in transit.
- In general, interlocked warning lights, physical barrier systems, or warning signs are not provided in loading/unloading areas to prevent vehicular departure before disconnect of transfer lines. Experience has shown that effective procedures and training of personnel operating Facility loading and unloading systems have prevented premature departure from racks.
- Drainage from rack areas flows into catchment basins or the Effluent Treatment Plant which are designed to handle spills. In all cases, the containment system will hold the maximum capacity of any single compartment of a tank truck or tank car loaded/unloaded in the plant.
- Additionally, Facility uses on-site spill control equipment such as absorbent pads, socks, and granular absorbent as active countermeasures in the event of a spill or small drip. In a worst case event, Facility drainage controls, as detailed on the Bulk Storage Containers tables located in Appendix A, provide additional containment.

## 8.0 SECURITY

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### 8.1 FENCES AND ENTRANCE GATES

The security measures in place for the Facility perimeter include fences and gates as follows:

#### ***Access***

- The Facility is completely enclosed by a chain link fence topped with three strands of barbed wire.
- The main gates are staffed by California State Certified security guards. Unstaffed gates are kept locked with periodic access controlled by security when being used by authorized contractors or refinery personnel.
- Facility contractors must also attend a local training course (e.g. BATC) for work within any of the Bay Area refineries. Facility contractors must also attend a site-specific training course for the Shell Martinez Refinery and obtain a Facility photo ID badge.
- In 2008, additional personnel identification requirements under the Transportation Worker Identification Credential (TWIC) program became effective. All Facility employees and contractors who need to work unescorted in the refinery must obtain a TWIC card. Under these requirements, all Facility employees or contractors must carry a TWIC card at all times or be fully escorted by a Facility or contractor with such identification, site training, Martinez site badge and specific knowledge of access requirements related to TWIC.

#### ***Signage***

- Signage at the Facility has been provided as required by law. "Private Property - No Trespassing" signs are in place at selected locations along the perimeter fencing around the plant. Additional signage is in place within the Facility to exclude unauthorized personnel from sensitive operational areas as well as numerous cautionary signs.
- Additional security detail is controlled under 49 CFR Part 1520 and provided in the USCG – Shell Martinez Refinery Facility Security Plan (FSP).

#### ***Security Cameras***

- Security cameras are installed throughout the Facility to provide additional visual security on a 24-hour basis. These cameras direct video images within the Facility that are monitored by Security staff and other Facility staff on a 24x7 basis.

## **8.2 OIL AND OIL PRODUCT STORAGE CONTAINER VALVES**

The security measures in place for the oil and oil product storage tank valves are as follows:

- Master flow and drain valves as well as any other valves that will permit direct outward flow of any tank's contents to the surface are located at sites accessible only to authorized personnel.

## **8.3 OIL AND OIL PRODUCT PUMP STARTER CONTROLS**

- Starter controls on all pumps in non-operating or non-standby status are located at a site accessible only to authorized personnel.

## **8.4 PIPELINE CONNECTIONS**

- When Facility piping is not in service or in standby service for an extended time, the loading/unloading connections are securely capped or blank flanged. This applies to piping that is emptied of its liquid content either by draining or by inert gas pressure.

## **8.5 LIGHTING**

- Lighting in operating areas and along the Facility perimeter has been extensively reviewed and increased where warranted. Adequate illumination is maintained during hours of darkness for spill discovery and prevention of spills resulting from acts of vandalism.

## **APPENDIX A**

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### **FACILITY SPECIFIC INFORMATION**























































## **APPENDIX B**

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### **FORMS, REPORTS AND CHECKLISTS**

## B.1 - DISCHARGE PREVENTION MEETING/TRAINING LOG

**(Example of information requirements – SPCC-related training records are maintained electronically by SMR L&D staff)**

[illegible]

**B.2 – OIL SPILL REPORT FORM**  
**(Shell Martinez Refinery – Oil Spill Response Plan – Figure 3.2)**

**NOTIFICATION DATA SHEET**

**Date of Incident:** \_\_\_\_\_ **Time of Incident:** \_\_\_\_\_

**INCIDENT DESCRIPTION**

**Reporter's Full Name:** \_\_\_\_\_ **Position:** \_\_\_\_\_  
**Day Phone Number:** (925) 313-3000 **Evening Phone Number:** \_\_\_\_\_  
**Company:** Shell Martinez Refinery **Organization Type:** \_\_\_\_\_

**Facility Address:** 3485 Pacheco Boulevard **Owner's Address:** \_\_\_\_\_  
 Martinez, CA 94553-0071 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Facility Latitude:** \_\_\_\_\_ **Facility Longitude:** \_\_\_\_\_

**Incident Address/Location:** \_\_\_\_\_  
 (if not at Facility): \_\_\_\_\_

**On-Scene Weather Conditions:** \_\_\_\_\_

**Responsible Party's Name:** \_\_\_\_\_ **Phone Number:** \_\_\_\_\_

**Responsible Party's Address:** \_\_\_\_\_

**Source and/or cause of incident:** \_\_\_\_\_

**Nearest City:** \_\_\_\_\_

**County/Parish:** Contra Costa County **State:** \_\_\_\_\_ **Zip code:** \_\_\_\_\_

**Section:** \_\_\_\_\_ **Township:** \_\_\_\_\_ **Range:** \_\_\_\_\_ **Borough:** \_\_\_\_\_

**Distance from City:** \_\_\_\_\_ **Unit of Measure:** \_\_\_\_\_ **Direction from City:** \_\_\_\_\_

**Container Type:** \_\_\_\_\_ **Container Storage Capacity:** \_\_\_\_\_ **Unit of Measure:** \_\_\_\_\_

**Facility Oil Storage Capacity:** \_\_\_\_\_ **Unit of Measure:** Gallons

**Were Materials Discharged?** \_\_\_\_\_ (Y/N) **Confidential?** \_\_\_\_\_ (Y/N)

CHRIS Code	Total Quantity Released	Unit of Measure	Water Impact (YES or NO)	Quantity into Water	Unit of Measure

**RESPONSE ACTION(S)**

**Action(s) taken to Correct, Control, or Mitigate Incident:** \_\_\_\_\_

**Number of Injuries:** \_\_\_\_\_ **Number of Deaths:** \_\_\_\_\_

**Evacuation(s):** \_\_\_\_\_ (Y/N) **Number Evacuated:** \_\_\_\_\_

**Was there any damage?** \_\_\_\_\_ (Y/N) **Medium Affected:** \_\_\_\_\_

**Description:** \_\_\_\_\_

**More Information about Medium:** \_\_\_\_\_

**CALLER NOTIFICATIONS**

**National Response Center (NRC):** 1-800-424-8802

**Additional Notifications (Circle all applicable):** USCG EPA State Other

**Describe:** \_\_\_\_\_

**NRC Incident Assigned No:** \_\_\_\_\_

**ADDITIONAL INFORMATION**

**Any information about the incident not recorded elsewhere in this report:** \_\_\_\_\_

**Meeting Federal Obligations to Report?** \_\_\_\_\_ (Y/N) **Date Called:** \_\_\_\_\_

**Calling for Responsible Party?** \_\_\_\_\_ (Y/N) **Time Called:** \_\_\_\_\_

**NOTE: DO NOT DELAY NOTIFICATION PENDING COLLECTION OF ALL INFORMATION.**

### B.3 – QUALIFIED OIL SPILL REPORT CHECKLIST

In the event of a qualified discharge or discharges, this page can be utilized to provide official notification to the US EPA's Regional Administrator. As required by 40 CFR Part 112.4, if the Facility has had a discharge or discharges, which meet one of the following two criteria, then this report must be submitted to the Regional Administrator within 60 days. (Check as appropriate)

- ☐ This Facility has experienced a reportable spill as referenced in 40 CFR Part 112.1(b) of 1,000 gallons or more.
- ☐ This Facility has experienced two (2) reportable spills (as referenced in 40 CFR Part 112.1(b) of greater than 42 gallons each within a 12-month period.

Facility Name and Location: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Facility Contact Person (Name, address/phone number): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Facility maximum storage or handling capacity: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Facility normal daily throughput: \_\_\_\_\_  
\_\_\_\_\_

Describe the corrective action and countermeasures taken (include description of equipment repairs and replacements): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Describe the Facility (maps, flow diagrams and topographical maps attached as necessary):  
\_\_\_\_\_  
\_\_\_\_\_

Describe the cause of discharge (as referenced in 40 CFR Part 112.1(b)) including failure analysis of the system is: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Describe the preventative measures taken, or contemplated to be taken, to minimize the possibility of recurrence: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Other pertinent information: \_\_\_\_\_  
\_\_\_\_\_

- A copy of this report is also to be sent to the appropriate state agency in charge of oil pollution control activities.

## **APPENDIX C**

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### **ADDITIONAL SUPPORTING DOCUMENTATION**



















## **CROSS REFERENCE**

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**U.S. EPA – SPCC  
40 CFR § 112.3,5,7,8  
CROSS REFERENCE**

<b>40 CFR § 112</b>	<b>BRIEF DESCRIPTION</b>	<b>SECTION</b>
<b>112.3</b>	Requirement to prepare and implement a Spill Prevention Control and Countermeasure Plan	----
(a,b,c)	Owners or operators must prepare and implement a Plan...	§1.5
(d)	A licensed Professional Engineer must review and certify a Plan for it to be effective...	PE Certification Page
(e)	Maintain a complete copy of the Plan at the facility if the facility is normally attended at least 4 hours per day, or at the nearest field office...	§1.3
<b>112.5</b>	Amendment of Spill Prevention Control and Countermeasures Plan by owners or operators	----
(a)	Amend the SPCC ...when there is a change in facility design, construction, operation or maintenance which materially affects the facility's potential for the discharge of oil...	§1.4
(b)	...complete a review and evaluation of the SPCC at least once every five years... amend the SPCC within six months of the review...implement within six months of preparation of any amendment.	§1.4
(c)	Have a Professional Engineer certify any technical amendment...	§1.4
<b>112.7</b>	Guidelines for the preparation and implementation of a Spill Prevention Control and Countermeasures Plan	----
----	...must prepare a Plan...have full approval of management...in writing.	Management Approval Page, Entire Plan
----	If the plan calls for additional facilities or procedures, methods, or equipment not yet fully operational, these items should be discussed in separate paragraphs, and the details of installation and operational start-up should be explained separately.	----
----	...follow the sequence specified (or cross-reference)...	Cross Reference
(a)(2)	Comply with all applicable requirements in this part... [or] state reasons for non-conformance ... and describe alternate methods...	----
(a)(3)	Describe ... physical layout ... and include diagram ....	§ 1.1, App. A
(a)(3)(i)	... [address in your Plan] .. the type of oil in each container and its ... capacity ...	App. A
(a)(3)(ii)	... discharge prevention measures including routine handling of products ...	§ 2.6
(a)(3)(iii)	...Drainage or discharge controls ... and procedures for control of a discharge ...	§ 4.0
(a)(3)(iv)	Countermeasures for discharge discovery, response, and cleanup (both ... facility's ... and contractor ....)	§ 2.1
(a)(3)(v)	Methods of disposal of recovered materials ...	§ 2.5
(a)(3)(vi)	Contact list and phone numbers ...	§ 2.3, Fig. 2.1
(a)(4)	Relate information ... [on a discharge] ...	Fig. 2.2
(a)(5)	Organize portions of the Plan ... that will make them readily usable....	Section Dividers
(b)	Where experience indicates a reasonable potential for equipment failure ... include in your Plan a prediction of the direction, rate of flow, and total quantity of oil....	Appendix A



**U.S. EPA - SPCC**  
**40 CFR § 112.3,5,7,8**  
**CROSS REFERENCE (Cont'd)**

40 CFR § 112	BRIEF DESCRIPTION	SECTION
(c)(1)	Onshore facilities.	----
(c)(1)(i)	Dikes, berms or retaining walls sufficiently impervious to contain spilled oil	§ 4.1, 4.2, 4.3, 5.2, App A
(c)(1)(ii)	Curbing	§ 4.1, 4.2, 4.3, 5.2, App A
(c)(1)(iii)	Sumps and collection systems	§ 4.1, 4.2, 4.3, 5.2, App A
(c)(1)(iv)	Culverting, gutters or other drainage systems	§ 4.1, 4.2, 4.3, 5.2, App A
(c)(1)(v)	Weirs, booms or other barriers	N/A
(c)(1)(vi)	Spill diversion ponds	§ 4.2, App A
(c)(1)(vii)	Retention ponds	§ 4.2, App A
(c)(1)(viii)	Sorbent materials	N/A
(c)(2)	Offshore Facilities.	----
(c)(2)(i)	Curbing, drip pans	N/A
(c)(2)(ii)	Sumps and collection systems	N/A
(d)	If you determine that the installation of structures or equipment listed in paragraphs (c) and (h)(1) of this section...is not practicable...clearly explain in your Plan...and provide...	§ 1.7, 4.2
(d)(1)	<i>A strong oil spill contingency plan following...40 CFR 109.</i>	Maintained Separately
(d)(2)	A written commitment of manpower, equipment and materials required to expeditiously control and remove any harmful quantity of oil discharged.	----
(e)	<i>Inspections and records</i>	----
	...in accordance with written procedures that you or the certifying engineer develop...with the SPCC Plan for a period of three years.	§ 3.2
(f)	<i>Personnel, training and spill prevention procedures</i>	----
(f)(1)	...train your oil-handling personnel in the operation and maintenance of equipment to prevent the discharges...	§ 3.1
(f)(2)	Designate a person...accountable for oil spill prevention...	Management Approval Page
(f)(3)	Schedule and conduct spill prevention briefings...highlight and describe known spill discharges...or failures, malfunctioning components, and recently developed precautionary measures.	§ 3.1
(g)	<i>Security (excluding oil production facilities)</i>	§ 8.0
(h)	<i>Facility tank car and tank truck loading/unloading rack</i>	----
(h)(1)	Where loading/unloading rack drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system... ...design any containment system to hold at least maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.	§ 7.1
(h)(2)	Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle break to prevent vehicular departure before complete disconnect of flexible or fixed oil transfer lines.	§ 7.1
(h)(3)	Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles should be closely examined for leakage, and if necessary, that they are tightened, adjusted, or replaced to prevent liquid leakage while in transit.	§ 7.1
(i)	If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or change in service that might affect the risk of a discharge or failure due to brittle fracture...evaluate the container for risk...	§ 3.2

**U.S. EPA - SPCC**  
**40 CFR § 112.3,5,7,8**  
**CROSS REFERENCE (Cont'd)**

40 CFR § 112	BRIEF DESCRIPTION	SECTION
(j)	In addition...include a complete discussion of conformance with applicable requirements...or any more stringent, with State rules, regulations and guidelines.	§ 1.6
(k)	<i>Qualified Oil-filled Operation Equipment</i>	----
(1)	<i>Qualification Criteria – Reportable Discharge History:</i> The owner or operator...that has had no discharges as described in § 112.1(b) from any oil-filled operational equipment...; and	N/A
(2)	<i>Alternative Requirements to General Secondary Containment.</i> If secondary containment is not provided for qualified oil-filled operational equipment pursuant to paragraph (c) of this section, the owner or operator of a facility with qualified oil-filled operational equipment must:	N/A
(2)(i)	Establish and document the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge; and	N/A
(2)(ii)	Unless you have submitted a response plan under § 112.20, provide in your Plan the following:	N/A
(2)(ii)(A)	An oil spill contingency plan following the provisions of part 109 of this chapter,	N/A
(2)(ii)(B)	A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.	N/A
112.8	Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities)	----
(a)	Meet the general requirements for the Plan listed under § 112.7, and...	----
(b)(1)	Restrain drainage from diked storage areas by valves or other positive means to prevent a spill...into the drainage system or inplant effluent treatment system, except where plan systems are designed to handle such leakage. You may empty diked areas by pumps or ejectors; however you must be manually activate these pumps...and inspect the condition of the accumulation before starting...	§ 4.1, 4.3
(b)(2)	Use valves of manual, open-and-closed design... If facility drainage drains directly into water course...you must inspect and drain uncontaminated retained stormwater, as provided in...paragraphs (c)(3)(iii)(iii), and (iv).	§ 4.1, 4.3
(b)(3)	Design facility drainage systems from undiked areas... to flow into ponds, lagoons or catchment basins, designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.	§ 4.2, 4.3
(b)(4)	If...not engineered as in paragraphs (b)(3), equip the final discharge of all ditches with a diversion system that would...retain the oil in the facility.	§ 4.2, 4.3
(b)(5)	Where drainage waters are treated in more than one treatment unit... provide two "lift" pumps and permanently install at least one of the pumps. Whatever techniques are used, facility drainage systems engineer... to prevent a discharge as described in § 112.1(b) in case there is an equipment failure or human error...	N/A
(c)	<i>Bulk storage containers (onshore)</i>	----
(c)(1)	Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage...	§ 5.1
(c)(2)	Construct all bulk storage container installations so that you provide a secondary means of containment for the entire contents of the largest single container plus sufficient freeboard to allow for precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil.	§ 5.2, App. A
(c)(3)	Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent discharge into an open water course, lake, or pond, bypassing the in-plant treatment system unless you:	----
(c)(3)(i)	Normally keep the bypass valve sealed closed.	§ 4.2
(c)(3)(ii)	Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in § 112.1(b).	§ 4.1, 4.2, 4.3
(c)(3)(iii)	Open the bypass valve and reseal it following drainage...under responsible supervision.	§ 4.1, 4.2, 4.3



**U.S. EPA - SPCC**  
**40 CFR § 112.3,5,7,8**  
**CROSS REFERENCE (Cont'd)**

40 CFR § 112	BRIEF DESCRIPTION	SECTION
(c)(3)(iv)	Keep adequate records of such events.	§ 3.2, 3.3, 4.3, App. B
(c)(4)	Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection...	§ 5.3
(c)(5)	Not use partially buried metallic tanks for the storage of oil unless the buried section of the tank is adequately coated...	§ 5.3
(c)(6)	Test each aboveground container for integrity testing on a regular schedule. Keep comparison records... In addition...frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices will suffice for the purposes of this paragraph.	§ 3.2
(c)(7)	Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines...	§ 5.5
(c)(8)	Engineer or update each container installation in accordance with good engineering practice to avoid discharges (and) provide at least one of the following devices:	-----
(c)(8)(i)	High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities, an audible air vent may suffice.	§ 5.1
(c)(8)(ii)	High liquid level pump cutoff devices set to stop flow at a predetermined container content level.	§ 5.1
(c)(8)(iii)	Direct audible or code signal communication between the container gauger and the pumping station.	§ 5.1
(c)(8)(iv)	A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges.	§ 5.1
(c)(8)(v)	You must regularly test liquid level sensing devices to ensure proper operation.	§ 5.1
(c)(9)	Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge...	§ 4.2, 4.3
(c)(10)	Promptly correct visible discharges which result in a loss of oil from container including...seam, gaskets, piping, pumps, valves...	§ 3.2
(c)(11)	Position or locate mobile or portable oil storage container to prevent a discharge as described in § 112.1(b)...furnish a secondary means of containment...for the largest single compartment or container with sufficient freeboard...	§ 5.4
(d)	<i>Facility transfer operations, pumping, and facility process</i>	-----
(d)(1)	Provide buried piping... installed or replaced on or after August 16, 2002, with a protective wrapping and coating...cathodically protect. If a section of buried line is exposed...carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated...	§ 6.2
(d)(2)	Cap or blank-flange the terminal connection...and mark it as to origin when piping is not in service, or in standby service for an extended time.	§ 6.3, 8.4
(d)(3)	Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.	§ 3.2, 4.2
(d)(4)	Regularly inspect all aboveground valves, piping, and appurtenances. ...also conduct integrity and leak testing on buried piping at the time of installation, modification, construction, relocation, or replacement.	§ 3.2
(d)(5)	Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.	§ 6.4

## **APPENDIX D**

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### **FACILITY DIAGRAMS**

















